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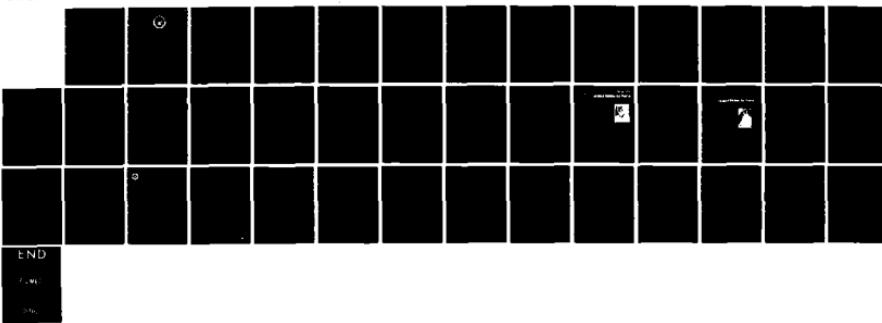
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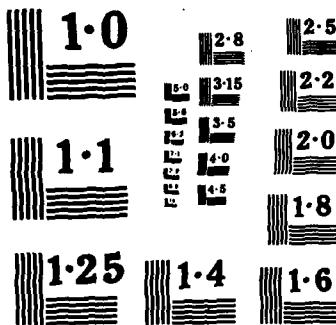
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AD-A156 069

1984



DOD

## VALUE ENGINEERING CONFERENCE REPORT

"VE - A TOOL THAT BENEFITS LINE MANAGEMENT"

### PART III

## WORKSHOP A : VE IN THE PROGRAM OFFICE

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)  This Conference Report summarizes and consolidates the proceedings from the 1984 DoD Value Engineering Conference held 1-2 November in Leesburg, VA. The findings and recommendations with supporting material from the five workshops are provided in addition to the complete plenary session presentations. An Executive Summary is presented in PART I.		

*85-7-9-103*

# 1984 DoD Value Engineering Conference Report

## PART III

### Workshop A: VE in The Program Office

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WORKSHOP "A"  
(VE in the Program Office)  
Executive Summary

**RECOMMENDATIONS**

- O Establish a VE goal for each weapon program and track progress to it.
- O Provide VE visibility by including training modules in courses offered at senior service schools such as DSMC.
- O Within each military department establish an investment Fund to provide front end funding for appropriate VECPs. This seed money would be available to take advantage of targets of opportunity. VE investment funds must transcend "color of money" considerations.
- O Reduce VECP throughput time - pay special attention to reducing VECP processing time.
- O Use preliminary VECPs to identify unacceptable ones early and thus increase approval rate.
- O Improve quality and comprehensiveness of VECP evaluations/responses from program offices.
- O VECPs must be considered in light of lowest life cycle cost.
- O VE Awareness must be a continuing effort
  - Train/inform PCO's program managers.
  - Address VE status at program management reviews.
  - Update VE Handbook.
  - Inform public of gains from VE (both in-house and external media).
- O Fund for negative savings on instant contracts to secure later gains.
- O Review some portion of rejected VECPs (annually)
  - Example: 10 percent of rejections/year at one organizational level above rejecting level.
- O Establish a "VE Road Show" highlighting significant success stories using displays and video tapes.

- 0 Create a "DoD VE Fellow" program.
- 0 Permit those with awards for significant VE accomplishments to accompany high level DoD member(s) on a desirable review or trip as individual incentives.
- 0 Provide incentives and encourage qualified personnel to remain longer in dedicated VE positions.
- 0 DoD should identify and provide VE "fenced" slots to services.
- 0 Contractors have a responsibility to sell VECPs effectively, just as any other proposed change.
- 0 Encourage the use of the VE program clause during full scale engineering development to avoid baseline problems and gain benefits from VE early in a program when they are greatest.

WORKSHOP "A"  
Presentation to Plenary Session  
DoD VE Conference  
1-2 November 1984

Just as I'm certain that it would be no surprise to any of you if I said that DoD needs to find more and better ways to save our precious defense dollars--no one who is familiar with the value analysis process would be surprised to hear that it works--disarmingly well. But--the Value Engineering Program's success certainly doesn't reflect this. If anyone believes that because value analysis works, the VE Program will; they're in for a rude awakening. With this sobering thought firmly planted in mind, our Workshop "VE in the Program Office" commenced its deliberations. Our objective was not only to identify the most significant of the forces which debilitate the potential cost savings giant but also to suggest specific and realistic ways to correct them. Where positive influences were identified, similar plans to magnify their effectiveness were focused on.

Workshop "A" addressed the following areas:

- o Program Office Attitudes - Marshall Whitaker
- o Funding - Lou DeVaughn
- o Staffing Requirements - Reg Lewis
- o Establishing VE Goals - Col. Jerry Vick
- o Advertising VE Benefits - Hank Mlodzeniec
- o Program Clause vs Incentive Clause - Andy Harris

Our analysis of the integrated comments from the panels in this workshop highlights many areas worthy of specific attention. The first area (from Marshall Whitaker's panel) is the influence of the program manager. How familiar is he with the VE methodology and its benefits? To simply inform him VE will provide the best product for the least dollars is insinuating that he isn't doing that at present. I believe that such a vague description of the VE methodology could be taken as an insult and the immediate response would be defensive and resistive to any further discussion of VE. It has instigated negative responses in some cases, so I believe that to have a really successful VE Program, program managers must be better informed. If the program manager is behind the VE Program and insists on timely evaluation and implementation of VECPs/VEPs then I guarantee this problem will most certainly be eliminated. To this end, the following actions have been identified to address the need (SLIDE 1). These actions should effectively insure getting our program managers and their staffs (Contracting/Engineering/Manufacturing/Logistics, etc.) on board with the VE Program.

On the subject of funding--one near and dear to our hearts-- Lou DeVaughn's panel identified a number of items for consideration. (SLIDE 2) As you can see there are many and complex issues in the funding area. Let me show you the expansion of one--Front End Funding. (SLIDE 3)

Reggie Lewis headed up a panel which considered staffing a VECP through the system--the other interpretation of "staffing"--that of personnel requirements--will be addressed later also. The following areas of concern were identified by Reggie's panel. (SLIDE 4) Recommendations to solve or ameliorate these are (SLIDE 5)--the recommended flow for staffing of a preliminary VECP is shown here also (SLIDE 6). The full up process is depicted here (SLIDE 7). Personnel are the key that requires proper staffing (SLIDE 8). We must have the VE presence at the right level.

Colonel Gerald Vick headed panel 4 on the subject of VE Goals--the panel did an excellent job of zeroing in on what we should be demanding of a VE Program--and what we might expect would be the reaction to those goals and demands.

The next slide (SLIDE 9) shows the consolidated findings of the panel and behind each goal there is a plethora of supporting rationale but let me address two of them--Insuring Adequate VE Awareness (SLIDE 10) and Reviewing Rejections of VECPs (SLIDE 11).

Panel 5, led by Hank Mlodzeniec, looked at advertising--from a number of different aspects. To assume that the program manager and PCO are going to immediately and enthusiastically implement VE would be a serious mistake. A degree of responsibility lies with the contractor to sell this proposal just as with any other idea or concept. There's another important aspect of advertising VE also--showing the world the benefits derived and most important to recognize those firms, program offices, and personnel who made it happen. The folks on the panel came up with some genuinely innovative ideas--let me share some of them with you. (SLIDE 12)

Panel 6 looked into the positive and negative aspects of the FAR VE clauses and zeroed in on baselines and measuring performance under the requirements clause. The panel concluded that there are three basic baselines:

Functional baseline  
Allocated baseline  
Production baseline

A further conclusion was that VECPs can be submitted against any of these baselines; however, a well defined baseline will obviously generate the most VECP activity. The panel felt that programs

which were early in the acquisition cycle that had a VE requirements clause yield more benefits than programs with an incentive clause. This was the basis for the panel's recommendation that DoDD 4245.8 be revised to require the use of the requirements clause of Full Scale Engineering Development (FSED) contracts. Another aspect that they delved into deeply was incentivizing the contractors to use VE as early as possible in the life of the program. They recognized that in order to do this goal measurement criteria and a strong VE program plan are a must. Other recommendations generated by this panel are shown in this slide. (SLIDE 13)

Briefly then, we must:

- o Implement a Pervasive effort to educate management in the specific benefits of VE;
- o Encourage or require program managers to identify funds for VE without relinquishing or restructuring their control of those funds;
- o Fairly and objectively assess our goals in search of the VE Grail;
- o Insist that contractors do a better job in preparing and selling their VE wares;
- o Incorporate the value analysis process as early as possible in the system design cycle;
- o Do a far better job of blowing our horns in the VE success department--and not only in-house--we need to get the word out to the American people as well.
- o Address the issue of proper staffing levels of dedicated value engineers in the program offices.
- o Allow for and use preliminary VECPs to facilitate the process

If we accomplish these things and continue our improvement in such areas as training, and advertising the success stories and benefits of VE as well as promote awards programs, I believe we will see a quantum improvement in the VE Program.

WORKSHOP "A" - PANEL 1

PROGRAM OFFICE ATTITUDE ON VE

- REQUIRE PMO TO ESTABLISH VE TARGETS/GOALS (DoD - PESO & VE COMMITTEE)
- GIVE VE VISIBILITY AT DSMC (PESO - DSMC)
- RESERVE FUND POOL FOR VE FRONT END FUNDING (DoD - PESO)

WORKSHOP "A" - PANEL II

FUNDING

- FRONT-END FUNDING FOR MAJOR VE PROJECTS
- "COLOR OF MONEY" A PROBLEM
- PAYING VE BENEFITS -- INSTANT/FUTURE/COLLATERAL
- FUNDING TO INCENTIVIZE PERSONNEL
- FUNDING SYSTEM SUPPORT CONTRACTOR & PRODUCTION CONTRACTOR WHEN THEY ARE THE SAME
- FRONT END FUNDING ACTIONS

FRONT END FUNDING

- DOD ISSUES DIRECTIVE
- MILITARY DEPARTMENTS CERTIFY ALL ACQUISITION DOCUMENTS/REGULATIONS (E.G., AR 70-1) CONTAIN VE PLANNING & BUDGETING REQUIREMENTS
- ENFORCED:
- ENSURE PROJECT OFFICERS/LEADERS BUDGET FOR VE
- BUDGET VE SEED MONEY FOR TARGETS OF OPPORTUNITY

SLIDE 3

WORKSHOP "A" - PANEL III

VE STAFFING REQUIREMENTS

AREAS OF CONCERN

- LONG PROCESSING TIME
- LOW APPROVAL RATE
- USE OF PRELIMINARY VECPS
- STAFF VE EFFECTIVENESS
- QUALITY OF PROGRAM OFFICE RESPONSES

VEPM's CHARTER

- /
- o PROBLEM - NEED TO HAVE DODWIDE SUPPORT
  - o AN IDEA - AS A SOLUTION COMPARE ITEM PM AND VEPM NEEDS
  - o CHALLENGE - THIS IDEA CAN PRODUCE A CHARTER
  - o CHARTER CONSTRUCTION

VALUE ENGINEERING (VE) PROGRAM MANAGERS

- CHARTER -

AS PRESENTED BY  
JONATHAN F. GLASSCOCK, VEPM  
TACOM, WARREN, MI  
OCTOBER, 1984



## Biography

# United States Air Force

ELECTRONIC SYSTEMS DIVISION, AIR FORCE SYSTEMS COMMAND, HANSCOM AFB, MA 01731  
OFFICE OF PUBLIC AFFAIRS (617) 861-5316

### JOHN A. ORPHANOS

John A. Orphanos is the Director of Manufacturing at the Electronic Systems Division of Air Force Systems Command, Hanscom AFB, Mass.

Born April 29, 1938, in Boston, Mass. he attended Boston Technical High School, and graduated from Northeastern University in 1962 with a bachelor of science degree in industrial engineering.

After a tour of duty with the US Army Corps of Engineers, Mr. Orphanos was an assistant professor of cooperative education at Northeastern University in Boston, Mass., from 1964 to 1968. He entered federal service in 1968 as an Industrial Engineer with the US Army Material Readiness Command, Washington, DC.

From 1971 to 1974 Mr. Orphanos functioned as a senior industrial engineer for the US Navy at the General Dynamics Corporation's Electric Boat Division in Groton, Conn. He came to the Electronic Systems Division in 1974 as Chief of the Production Management Division in the Deputy for Command and Management Systems. He assumed his present duties in 1977.

As Director of Manufacturing, Mr. Orphanos manages a professional engineering and management organization responsible for production management for all ESD's RDT&E and production programs. These programs have a value of seven billion dollars.

He is married to the former Vicki Papanicolas of Whitman, Mass. They have two children, Marion and Scott, and make their home in Acton, Mass.

(Current as of September 1984)

-30-

Following graduation from the Industrial College of the Armed Forces in June 1974, he transferred to the Armament Division at Eglin Air Force Base, Fla., as the deputy for contracting and manufacturing.

From July 1976 to June 1978, the general served as assistant for procurement management, Office of the Assistant Secretary of the Air Force for Research, Development and Logistics, Washington, D.C. He then moved to the Aeronautical Systems Division at Wright-Patterson Air Force Base, Ohio, as deputy for contracting and manufacturing of the largest contracting activity in the United States. While there General Weiss led a major study effort to review the quality assurances practices of countries around the world. The study called "Quality Horizons" was published in November 1979 and acted as an impetus for improving product quality in the United States.

Transferring to Air Force Systems Command headquarters at Andrews Air Force Base, Md., in February 1981, General Weiss served as deputy chief of staff for contracting and manufacturing. While there he was responsible for the acquisition of major weapon systems and contracting support for the command's laboratories, test centers and ranges. The general led major initiatives for enhancing the productivity of the aerospace industry through effective use of manufacturing technology seed money and the modernization of aerospace factory operations through the technical modernization program. He assumed his present duties in January 1983.

His military decorations and awards include the Legion of Merit with two oak leaf clusters, Meritorious Service Medal, Joint Service Commendation Medal, Air Force Commendation Medal with two oak leaf clusters and Army Commendation Medal.

He was promoted to brigadier general Oct. 1, 1981, with same date of rank.

General Weiss is married to the former Helene R. Brick of Paterson, N.J. They have three children: Steven, Michael and Melissa.

-30-



# Biography

## United States Air Force

Secretary of the Air Force, Office of Public Affairs, Washington, D.C. 20330

### BRIGADIER GENERAL BERNARD L. WEISS

Brigadier General Bernard L. Weiss is director of contracting and manufacturing policy, Office of the Deputy Chief of Staff for Research, Development and Acquisition, Headquarters U.S. Air Force, Washington, D.C. He is responsible for developing contracting and manufacturing policy relating to major weapon systems acquisitions, logistics support and base support for the Air Force.

General Weiss was born in the Bronx, N.Y., and later moved to Fairlawn, N.J., where he completed high school in 1951. He graduated from New York University in 1955 with a bachelor of science degree in government and education (cum laude) and received his commission as a distinguished military graduate through the Reserve Officers' Training Corps program. General Weiss earned his master of business administration degree (with honors) from Syracuse University in 1966 through the Air Force Institute of Technology. His service schools include Squadron Officer School by correspondence; the Industrial College of the Armed Forces, Fort Lesley J. McNair, Washington, D.C., in 1974; and the Advanced Management Program, University of Michigan, Ann Arbor, in 1978.

He entered the U.S. Air Force in May 1956 and served at the New York Air Procurement District, New York City, as administrative contracting officer. In December 1958 the general transferred to the 20th Tactical Fighter Wing, Royal Air Force Station Wethersfield, England, as base procurement officer. He served there until October 1960 when he was assigned to Headquarters Air Defense Command, Ent Air Force Base, Colo., as chief of the Systems Management Division. He was responsible for the procurement and administration of operations and maintenance contracts supporting the Distant Early Warning line, Ballistic Missile Early Warning System and Spacetrack stations. General Weiss worked closely with Canadian and Danish government officials in this mission support area.

After completing his master's degree in February 1966, General Weiss was assigned to the Defense Contract Administration Services Region, Los Angeles, as manufacturing officer and plant office chief at Garrett Air Research Corporation. He was later assigned as chief of the Contract Administration Directorate for the region headquarters.

From June 1969 to July 1971, General Weiss was assigned to Air Force headquarters as a logistics plans action officer, Office of the Deputy Chief of Staff, Systems and Logistics. He then became a procurement staff officer in the Directorate of Procurement Policy. The general was responsible for contract policy formation and implementation for major weapon systems, such as the A-10 and F-15. He also led a major command group to improve the reliability and maintainability of Air Force hardware in the field.



(Current as of March 1983)

O V E R

WORKSHOP "A" - PANEL VI

PROGRAM VS INCENTIVE CLAUSE

- REEVALUATE DoD VE GOAL OF 0.7% OF TOA OUSDRE(PESO)
- APPLY THE RESULTING GOALS SELECTIVELY -SERVICES
- SET TIMELINESS GOALS FOR PROCESSING AND IMPLEMENTING VECPS -OUSDRE (PESO)
- CONSIDER SHARING AWARDS/REWARDS WITH CONTRACTING AND CONTRACT ADMINISTRATION PERSONNEL

SLIDE 13

WORKSHOP "A" - PANEL V

ADVERTISING VE

- DEVELOP DoD VE EXHIBIT
  - PREPARE VIDEO TAPE OF VE SUCCESSES
  - PROVIDE MEDIA WITH VE SUCCESS STORIES
  - INCLUDE VE IN DSMC
  - DoD FELLOW PROGRAM
  - ANNUAL VE AWARDS DINNER
  - AWARDEES PARTICIPATE IN HIGH LEVEL TRIPS
- (ABOVE ARE DoD ACTION ITEMS)

SLIDE 12

REVIEWING REJECTED VECPS

- ANNUAL
- 10% OF REJECTED VECPS
- ONE ORGANIZATIONAL LEVEL ABOVE

SLIDE 11

ADEQUATE VE AWARENESS

- (+) TRAINING (PCO'S, MANAGEMENT, LEADERS)
- (+) REVIEW MEETINGS WITH CONTRACTORS
- (+) WORKSHOPS
- (+) MANAGEMENT REVIEWS
- (+) UPDATE DOCUMENTATION (1968 HANDBOOK?)
- (+) PUBLIC RELATIONS (BOTH INTERNAL & EXTERNAL)  
(GOOD NEWS ITEMS, SUCCESS STORIES BIG & SMALL)

WORKSHOP "A" - PANEL IV

VE GOALS

LOWEST LIFE CYCLE COST

REDUCE CYCLE TIME

ADEQUATE PROFESSIONAL VE STAFFING

ADEQUATE VE AWARENESS

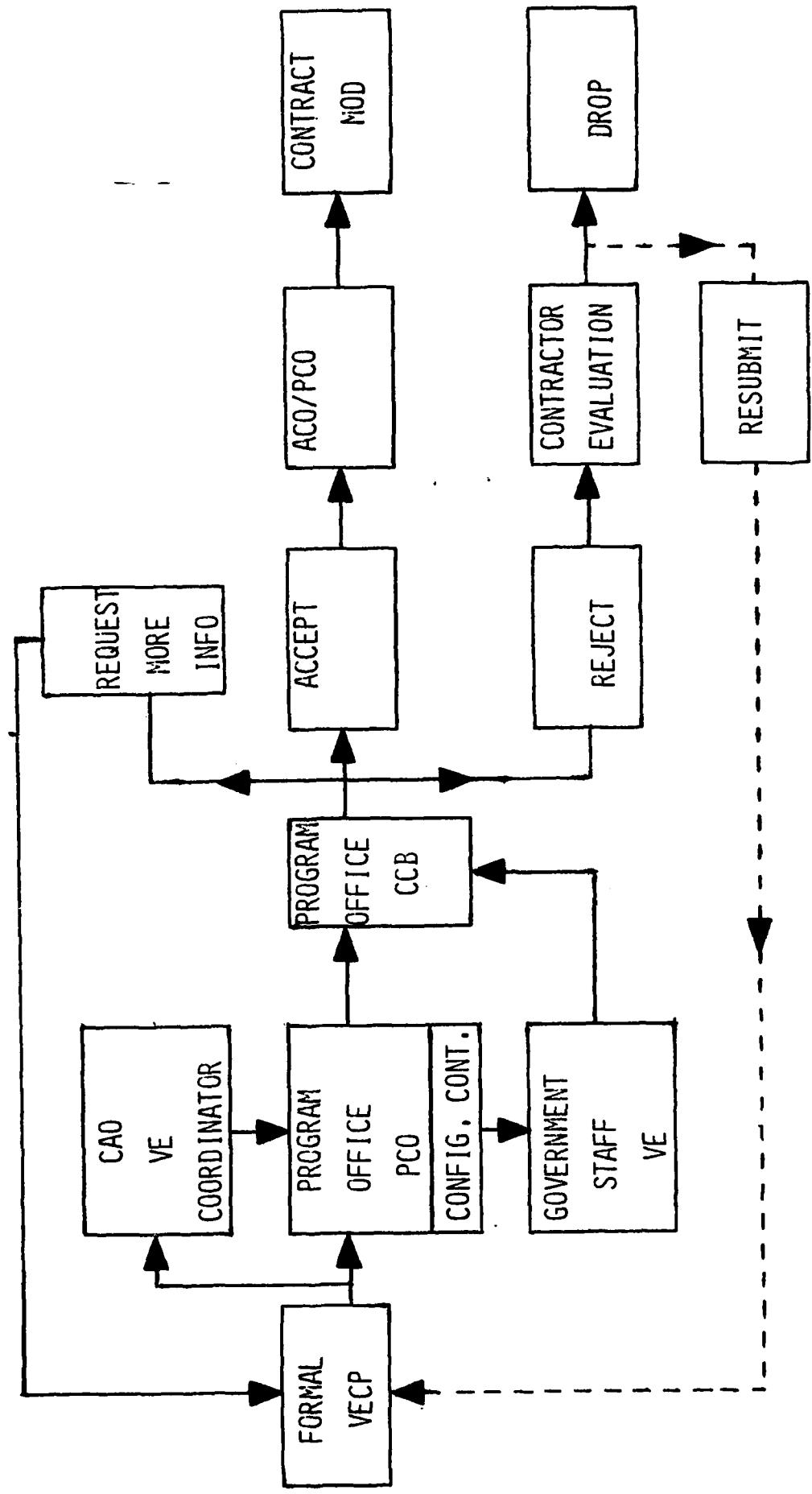
REVIEW REJECTIONS

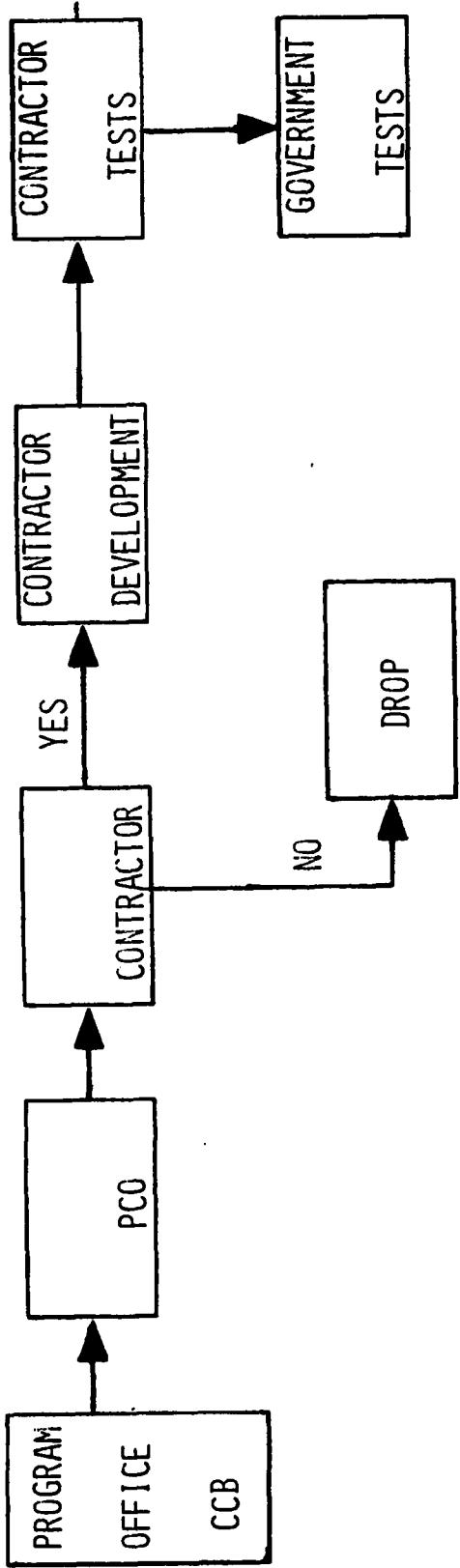
FUND NEGATIVE SAVINGS ON INSTANT CONTRACTS

## STAFFING REQUIREMENTS

- DEPENDS ON COMMITMENT
  - DEDICATED PEOPLE WITH EXPERTISE
  - GRADE LEVEL EQUAL TO RESPONSIBILITY
  - MUST ATTRACT QUALIFIED PEOPLE
  - MUST HAVE RIGHT PERSONALITY
  - ENCOURAGE PEOPLE TO STAY IN VE
- DoD TASK SERVICES TO IDENTIFY MANPOWER REQUIREMENTS
  - DEGREE OF INVOLVEMENT
  - DEGREE OF EMPHASIS
- DoD PROVIDE VE SLOTS

FORMAL VECP FLOW CHART



PRELIMINARY VECP FLOW CHART

## RECOMMENDATIONS

- PROPOSED FLOW
- ENCOURAGE USE OF PRELIMINARY VECPS TO:
  - LIMIT RISK
  - IMPROVE INTERFACE
  - SCREEN PROPOSALS
  - DEFINE FUNCTION
  - DECREASE TIME
  - ESTABLISH AUTHORSHIP
- ENCOURAGE PROPOSAL BRIEFINGS BY CONTRACTORS

<u>ITEM PM'S</u>	<u>PM CHARTER PARALLELS</u>	<u>VEPM'S</u>
PREPARED AND SUBMITTED BY MATERIAL DEVELOPER	PREPARED AND SUBMITTED BY VEPM TO COMMANDER	
NAMES INDIVIDUAL ASSIGNED, HIS MISSION, NORMAL REPORTING CHANNEL AND SPECIAL REPORTING	SAME	
THE INTERFACE AND PARTICIPATING AGENCIES INVOLVED	THE INTERFACE AND PARTICIPATING COMMAND ORGANIZATIONS INVOLVED	
SUPPORT TO BE FURNISHED PM OR RELATIONSHIPS WITH HIM WHICH ARE NOT IN DIRECTIVES	SAME	
THE AUTHORITY OF THE PM AND PROVISIONS FOR DIRECT CHANNEL AND O WHOM	SAME	
PROGRAM FOR WHICH RESPONSIBLE	SAME	
SPECIAL INSTRUCTION, DELEGATIONS OF AUTHORITY TO PM FOR PROGRAM EXECUTION	SAME	
LOCATION OF PM & THE ORGANIZATION(S) THAT WILL PROVIDE ADMINISTRATION	SAME	
CONDITION UNDER WHICH PM WILL PHASE OUT AND WHO WILL ASSUME	SAME	
CHANGES, REVIEW AND OTHER MODIFICATIONS ADD ONS	SAME	

- o DESIGNATION
- o MISSION
- o AUTHORIZATION AND RESPONSIBILITY
- o SUPERVISION AND COMMUNICATIONS
- o REVIEW
- o TERMINATION



DEPARTMENT OF THE ARMY  
UNITED STATES ARMY TANK-AUTOMOTIVE COMMAND  
WARREN, MICHIGAN 48090

TACOM VALUE ENGINEERING (VE) CHARTER

PROGRAM MANAGEMENT

I. Designation of Program Officer

By authority of this charter and effective this date, Mr. Jonathan F. Glasscock is hereby appointed as Value Engineering Program Manager (VEPM) for TACOM. The appointment shall be in effect until rescinded, terminated or superseded.

II. Mission

The mission of VEPM as authorized and chartered by the Commander is to have the full executive responsibility and lineal authority for the centralized management of VE. It is to initiate actions to implement the Army VE Program policies and objectives with authority to act for the Commander to meet these requirements. This office will interface with and exercise staff supervision over the command's VE activities which are conducted by participating organizations with allocated VE goals. It will act as the TACOM technical authority and consultancy on VE matters.

III. Authorization and Responsibility

Authorization and responsibility of the VEPM is designated as the TACOM principal and primary point of contact (POC) for all related VE matters. This charter authorizes the VEPM direct channel communication to DARCOM VEPM, when required to deviate or to facilitate coordination of VE, and to directly interchange non-proprietary information with industry and government within the U.S. The VEPM is responsible and delegated authority to intensive manage. This includes directive authority for planning, organizing, coordinating all authorized VE activities. He is responsible for the following functions:

- (1). Establish and conduct an active integrated aggressive in-house and contractual VE effort.
- (2). Evaluate effectiveness of resources budgeted/assigned to the program as needed to achieve Army VE Program objectives and goals.
- (3). Assess TACOM procurements for effective utilization of VE clauses in contracts.

4. Allocate VE goals to directorates, project/product managers and other organizational elements that report to the CG, TACOM and to evaluate their VE goal performance results.
5. Provide VE counsel services to all elements of the Command and contractors to improve the quality and to increase the quantity of proposals (VEP/VECP) submitted.
6. Plan and control the overall management of VE projects; i.e., in-house VE studies, proposals and contractor VECPs; maintain project records, including history and supporting data for validated VE cost avoidance/estimated savings.
7. Conduct independent investigations to identify areas with potential for significant cost reductions. These include all activities which are performed or conducted at TACOM. The areas are the all mission fuctions (e.g., research and development, engineering, maintenance, materiel management, product assurance and procurement), et al.
8. Analyze and report on approved VE proposals that may have applicability at other DARCOM activities.
9. Develop and provide instruction and training in VE program requirements, techniques, and procedures.

#### IV. Support and Location

All administrative support is to be provided by the Directorate for Readiness Engineering (DRSTA-G). The VEPM is located in the Readiness Engineering Directorate as an organizational element. Communications to the VEPM and his staff should be addressed:

TACOM VEPM (DRSTA-GV)  
Warren, MI 4809C

#### V. Supervisory and Communication Channels

The VEPM is supervised by the Director for Readiness Engineering. The VEPM has a direct channel to the Commander TACOM (a) for purpose of reporting VE proposal, study and change proposal progress, status; and (b) for purpose of identifying/recommending resolution of special VE problems warranting or required by this charter. These actions of notification are the VEPMs responsibility especially when it appears that any DARCOM/TACOM approved VE program goal/objective has been forecast not to be met. Any new or changed requirements associated with the VE program imposed on TACOM shall be directed to the VEPM. TACOM PMs, Directorate or Offices receiving such requirements direct will not respond direct without advance concurrence of the VEPM.

#### VI. Review

This Charter will be reviewed annually and revised as required by the VEPM to insure currency and completeness. Changes require Commander approval.

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best available copy.

**VIII. Termination**

**This Charter Will be terminated after the Value Engineering Program is rescinded, terminated or superseded by approving authority.**

**APPROVED: DUARD D. BALL  
General USA  
Commander**

**DATE:** \_\_\_\_\_

### VALUE ENGINEERING CHARTER

SINCE 1969, THE GOVERNMENT ACCOUNTING OFFICE (GAO) AND (IG) HAVE REPORTED THEIR FINDINGS ON VALUE ENGINEERING (VE) USE AND THE NEED TO GET VE MORE INVOLVED IN DOD CONTRACTS. ON 29 AUG 83 SEC OF DEFENSE RENEWED CONFIDENCE IN VE'S USE IN HIS SPARE PARTS INITIATIVES (SPRINT) SO THAT OUR HARDWARE WOULD BE SUPPORTED WITHIN THE DEFENSE APPROPRIATION. IT IS IMPORTANT TO US IN VE TO RESPOND AND ENTHUSIASTICALLY SUPPORT THESE DEMANDS IN OUR RESOURCE MANAGEMENT. IT IS NOTED THAT THE ARMY EXPECTS TO DEDICATE VE FUNDING TO APPROPRIATION BY LINE # STARTING IN FY85. AT MY LEVEL, I WANT TO SEE US IN A POSITION TO MANAGE EACH OF THESE AVENUES CONSERVATELY; NOT ONLY TO AID VE, BUT OUR DEFENSE-WIDE APPROPRIATIONS AS WELL. THE VE CHARTER CAN SIGNIFICANTLY GIVE THE COMMANDER A TOOL WITH WHICH TO ACCOMPLISH IT. AS DOES THE SECRETARY OF DEFENSE SPRINT PROVIDE AN EFFECTIVE MEANS AT HIS LEVEL; SO SHOULD THE CHARTER AT A COMMAND LEVEL, IN DLA, THE ARMY, NAVY, AIR FORCE OR ANOTHER GOVERNMENT AGENCY.

AT THIS POINT, YOU MAY WONDER - IS THIS REALLY GOING TO HELP YOU AND YOUR VE PROGRAM? HERE'S HOW IT EVOLVED. IN ORDER TO DEVELOP THIS LOGICAL APPROACH, A PROBLEM/SOLUTION IDEA WAS EXPLORED. ALTERNATIVES WERE AVAILABLE AND IN USE AT VARIOUS LEVELS WITHIN OUR COMMANDS. A LITTLE MORE TIME IN RESEARCHING AND TESTING SOME RESULTS IT IS MY EXPERIENCE THAT TO MEET THE CHALLENGE, WE ALL FACE, STRONGLY SUGGEST VE PROGRAM MANAGED. THIS SEEMED TO BE

THE STATE OF THE ART APPROACH TO ME AND I PURSUED IT. AS WE REVIEW THE ELEMENTS OF THE CHARTER, SEE IF IT WILL HELP VE PROGRAMS.

I BELIEVE VALUE ENGINEERING PROGRAMS ARE OF SUCH IMPORTANCE, SUCH COMPLEXITY AND MAGNITUDE AS TO WARRANT THE EMPLOYMENT OF A SPECIAL CENTRALIZED MANAGEMENT STRUCTURE. THREE YEARS AGO, WE WERE ASKED TO ATTAIN 18 MILLION DOLLARS IN SAVINGS, LAST YEAR IT WAS \$44.5 MILLION AND WILL BE OVER \$72 MILLION THIS YEAR. IT IS PROPOSED WE ACKNOWLEDGE THIS FUNCTION's RESPONSIBILITIES, PREPARE AND SUBMIT A VE CHARTER. HOWEVER YOUR COMMANDER'S APPROVAL IS NEEDED TO ESTABLISH THE VEPM WITH A CHARTER WHERE HIS SPECIALTY WILL BE MOST EFFECTIVE. BUT, DO YOU NEED IT? WHERE DOES VALUE ENGINEERING APPEAR IN YOUR COMMAND's ORGANIZATION CHART? ARE YOU AND YOUR COMMANDER ABLE TO TALK ON HIS VE POLICY AND IMPLEMENTATION OF HIS VE MATTERS? SINCE THE LATE '60s, VE HAS BEEN ABOLISHED COMPLETELY THREE TIMES AT MY COMMAND. IT WAS REINSTATED EACH TIME BY IG FINDINGS AND/OR RELATED GAD RECOMMENDATIONS. I'VE TRIED TO ANALYZE WHY. (PAUSE) IT MAY BE THAT THE VE FUNCTION COMPETES WITH THE OTHER MISSION/FUNCTIONS OR VE BECOMES SO OBSCURED AND IS BURIED FAR DOWN IN HIS ORGANIZATION. THE COMMANDER NEVER EVEN KNEW VE NEEDED TOP LEVEL SUPPORT OR OFTEN CHANGING COMMANDERS DIDN'T HAVE A CHANCE EVER TO TRY UNTIL IT WAS TOO LATE: TO INFLUENCE VE TRENDS. REASON: VE POTENTIAL STUDIES AND PROPOSALS DEVELOPED THIS YEAR WILL MATURE IN FUTURE YEARS SO WHEN A VEPM FUNCTION HAS A BREAK IN CONTINUITY, IT OFTEN HAPPENS: VE STUDIES ARE ABANDONED AND VECPs ARE TURNED OFF. A POSITIVE COURSE OF ACTION WAS NEEDED.

THERE ARE AS MANY SOLUTIONS AS THERE ARE VE IDEAS BUT ALLOW ME TO PURSUE THIS ONE. I'VE PROPOSED - USE OF A CHARTER BY CDRS TO SUPPORT THEIR VE FUNCTIONS. LET ME SHOW SOME OF THE PRINCIPLES SET FORTH IN ARMY PROGRAM MANAGEMENT (AR 70-71:) (PAUSE) EXPLAIN DIFFERENCES HERE ON VE. THE VEPM STAFF WILL COMPLEMENT THE COMMANDERS ALREADY STRUCTURED STAFF ORGANIZATIONS.

ONE PURPOSE OF THIS VE CHARTER IDEA IS TO PROVIDE FOR CONTINUITY AND SUPPORT BY MEANS OF A COMMITTING, GUIDING DOCUMENT. IT PROPOSES TO LET A NEW VEPM KNOW WHAT TO EXPECT AS SUPPORT - FROM HIS PREDECESSOR AS DELEGATED FROM HIS COMMANDER AND AS COORDINATION AMONGST OTHERS HE SUPPORTS. IN MANY COMMAND ORGANIZATIONS, NO AMOUNT OF MOTIVATION, PERSUASION OR PUBLIC RELATIONS WILL EVER ATTAIN ENOUGH MOMENTUM TO MEET ITS VE GOALS. WITH SOME, THERE IS JUST NO INTEREST TO BECOME INVOLVED. EVEN CASH INCENTIVES FOR IDEAS COMES TO MEAN LESS. A CLEAR, CONCISE CHARTER WILL BE THE NEEDED SUPPORTING MOTIVATOR NEEDED TO BE PRODUCTIVE IN THAT SITUATION.

TO ATTAIN THIS COMMITMENT, SUPPORT AT THE COMMAND LEVEL IS A MUST. IT SUGGESTS AN APPROVED, COORDINATED AND ESTABLISHED ORGANIZATION, MEANING A CHARTERED VEPM. IT IS PROPOSED THIS DOCUMENT BE SET FORTH IN ESTABLISHING THE AUTHORITY TO GET NEEDED COORDINATION FROM ALL DIRECTORATES, PMs AND OFFICES OF THAT COMMAND. FROM A FUNCTIONAL ANALYSIS VIEWPOINT, WE MUST REVIEW THE CHARTER

FOR REVISION TO KEEP UP WITH TECHNOLOGY CHANGE, WITH RESOURCE CHANGE, AND POSSIBLE CHANGE TO THE METHODOLOGY OF THE DOCUMENT ITSELF.

HOW TO GET IT TOGETHER SO THAT IT QUICKLY RECEIVES ADEQUATE MANAGEMENT ATTENTION OR A LOOK AT THE FUNCTION OF GETTING A DOCUMENT APPROVED OR STAFFED FOR APPROVAL.

IN THE END, THE COMMAND SIGNS AND DATES THIS COMPLETELY STAFFED CHARTER, A SIMPLE TWO OR THREE PAGES SHOWN HERE FOR EXAMPLE. STAFFING CAN BE RAPIDLY OBTAINED: THE METHOD I'D SUGGEST IS DISTRIBUTING COORDINATING COPIES TO EVERY AFFECTED ORGANIZATION WITH THE SUGGESTION THAT BRIEF CHANGES TO IMPROVE BE DONE BY CONCURRENCE WITH EXCEPTION TYPE REPLIES. WHERE REPLIES ARE NOT RECEIVED TOWARD THE END OF THE SUSPENSE DATE, I'D MEET WITH THOSE DIRECTORS. MOST NEVER HAVE HEARD OF A CHARTER FOR VE AND YOU CAN LEAVE ANOTHER DIRECTOR MORE VE INFORMED. AS OUR 5-4 RELATES, IT'S A MEASURE OF HOW COST CONSCIOUSNESS AN ORGANIZATION IS IN IT'S PERFORMANCE. IT SEEMS THAT QUICKLY SETS THE MOOD FOR WINNING OVER A MANAGER'S INTEREST.

THIS IS THE THIRD CHARTER I'VE EXPERIENCED FOR DIFFERENT PROGRAMS. EACH TIME, IT HAD TO BE SOLD. PRESENTATIONS INCLUDED WHAT A CHARTER WOULD DO THAT A MISSION STATEMENT OR OTHER APPOINTING DIRECTIVE DIDN'T. IN THIS REGARD, KNOW FROM WHERE YOUR LISTENER COMES, E.G., IF HE'S A FORMER PM, HE'LL WANT TO BE ASSURED THAT

YOUR VE WILL HELP SUPPORT HIS PROJECT/PROGRAMS. IF HE'S A FORMER FIELD COMMANDER - DOES VE WITH A CHARTER SUPPORT THE TROOPS ANY BETTER? THE R&D COMMANDERS GENERALLY TRY TO HELP BY EXPANDING THE DOCUMENT, SO BE ABLE TO PRESENT A REASON FOR HIM TO "WANT" TO SIGN YOUR CHARTER. (PAUSE FOR EXAMPLE) THE USE OF MILESTONES WITH A CHARTER DEVELOPMENT AT ONE MAY HELP YOU GET VE STARTED ON MEETING THESE FY85 GOALS OR TARGETS. OF COURSE, MORE ATTENTION THAT CAN BE GIVEN TO THE MERITS OF VE (WHICH RESULT IN BROADENED VE COVERAGE) WITHOUT DISTRACTING THE BETTER.

WHATEVER THE COURSE, KEEP IT SIMPLE & SAVE TIME. THERE MAY BE OTHER NEW WAYS OF ASSURING AND KNOWING SUPPORT IS THERE. THE STATE OF TECHNOLOGY CHANGES - SO SHOULD METHODOLOGY OF GETTING A CHARTER TO WORK FOR YOU.

IN CONCLUDING THESE REMARKS: IF YOUR VE PROGRAM IS NOW GOING ALONG SMOOTHLY AND YOUR COMMAND IS MEETING ITS TARGETS AND GOALS, PUT THIS AWAY FOR THE FUTURE. HOWEVER, IF NOT, THEN SEVERAL THINGS PRESENTED HERE WILL BETTER YOUR CHANCES OF VE PROGRAM SUCCESS. LET THE VEPM CHARTER PUT THE WHOLE THING TOGETHER, NOTHING SUCCEEDS WITHOUT TRYING, SO SOME PROVED, SUCCESSFUL IDEAS ALREADY ARE AVAILABLE. THEREFORE, IF ALL THE VE DOCUMENTS ARE IN PLACE, LOOK TO THE MORE EFFECTIVE IDEAS, AND LIKE OUR TECHNOLOGIES - KEEP ON IMPROVING. ANY QUESTIONS? (PAUSE)

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**DOD VALUE ENGINEERING (VE) CONFERENCE**

1-2 November 1984

WORKSHOP A

Presenter - Jack T. Stevenson

U. S. ARMY TACOM

Xerox International Center for Training and Management Development  
Leesburg, Virginia

## VE AND THE R&D ENGINEER

The information presented herein is intended to be a constructive discussion of the current VE program by one R&D engineer. If the following comments were peculiar to only one individual there would be no reason to raise these issues; however, since they are shared by a significant number of known engineers they are considered of value to the program. Typical activities of an R&D engineer are first discussed to establish a background for the issues to be addressed.

Research and development of military hardware, in this case, can be on a broad range of items from Military Adaptation of Commercial Items (MACI) to a Main Battle Tank. The vast majority of the development is based upon requirements from TRADOC. These requirements state a vehicle must perform a given mission yet interface with man, sister equipment, maintenance, training, tooling, facilities and meet the basic logistic limitations. In addition the vehicle must operate in a variety of environmental conditions from extreme cold to extreme hot and from monsoon conditions to dust obscured airid wastelands.

In most R&D programs a great deal of time is consumed between receiving the new TRADOC requirement through preparing the R&D program and ultimately receiving the approval and funds to proceed, a vital part of program development. Most military hardware R&D is done via a development contract with a related industry. Prior to awarding a contract it is mandatory that a thorough description of the item be prepared.

The description, "statement of work" (SOW), for the R&D hardware requires a great deal of technology investigation to identify those which best provide the particular operation required. During this process there are many trade-offs primarily technical and cost to produce the optimum end item SOW.

Assuming the ideal SOW has been prepared, the next phase is a solicitation to industry for proposals and bids. Should the solicitation be open to all who wish to bid or is there justification for a sole source contract? In most R&D contracts a cost-plus-fixed-fee (CPFF) contract is the type awarded. Here, for the first time, will be the test to determine how well the contract SOW and the program budget are matched.

The subsequent bids when received, and if not a sole source contract, are subject to a formal review. The selection is normally done by a source selection board (SSB) consisting of engineers with backgrounds related to the significant technologies applied. At this time, performance, reliability, durability and all the interface requirements mentioned above are carefully evaluated. Those proposals which are rated high enough to qualify technically are then evaluated for cost. Of those qualified, the low bidder may or may not be awarded the contract. There are overall trade-offs as to the "military worth" in relation to cost.

Up to now, this has been a discussion of military hardware R&D engineer's typical development process, which is a continuous trade-off function including cost. This is only a small portion of the engineer's normal R&D responsibilities as relates to each program but is considered to be sufficient to provide the background for the issues to be addressed.

Many engineers consider VE as a "Johnny-Come-Lately", "New-Kid-on-the-Block" concept that is a simulation of the trade-off activities he has been doing for years. Experience, common sense and often trade-off analysis have been his common denominator to providing the best hardware for the buck. To impose VE principles is nothing new. That he has been doing all along, but to ask him to record and submit a VE proposal is new and is not going to further reduce the program cost, it only increases his already overladen paper burden. Needless to say, he does not feel the VE program does anything but add another useless imposition upon his job.

Lets discuss the development contract that has been awarded. Since it is a CPFF, by nature, changes imposed after award triggers a contract cost increase. Leave it untouched, with an adequately prepared SOW, frequently the development is completed within the bid amount. Next, add a clause in the CPFF contract, which requires the application of VE principals, and what is the end result? Many engineers feel that when a contractor is awarded his portion of the savings, we have paid a second time for such a change. Without the VE clause in the contract the contractor would have automatically made the change to reduce his costs thus increasing his margin of profit. In a fixed price contract for a commercial or production item, VE as a part of the contract, appears to warrant consideration.

Having established the attitude of some of the military hardware R&D engineers, the real question is what can be done to give him a positive and enthusiastic interest in reporting his day to day cost reduction accomplishments.

First, simplify the VEP process. The engineer's primary interest is in the technical requirements of the program. Frequently, the VE cost savings calculation/validation process is a meticulous process and requires many hours of time and effort. This is not his primary interest.

Second, recognize the need for a well thought out definition of the term "implementation". Recognize the lead time from the formal authorization of an ECP and the time a savings actually begins and years later reaches a much higher mean level. It is often beyond the present three year credit period.

Third, base VE savings on a life cycle value rather than the first three. There have been occasions when apparent savings lead time has been much more than three years.

Fourth, to mandate that through VE so much money will be saved does very little to stimulate individual enthusiasm for the program. A suggested alternate to the goal/quota approach would be the reward approach. That is, offer a percentage of the savings to the engineer as we do the contractor. AR 5-4 could be amended to include a sliding scale rate which would specify the percentage he would receive. If the amounts were sufficient this would more than

likely stimulate the R&D enthusiasm for the VE program and the need for a goal/quota approach would become obsolete. It is anticipated that many other Army employees would become enthusiastic in response to the reward approach and subsequently we would recognize a much more accurate VE savings figure.

Cost reduction is recognized by these engineers as an essential part of their job. They have been practicing it long before AR 5-4 and the formal VE program came into being. As the AR 5-4 is written, it in essence indicates the development engineer has not been VE conscious. That is not true. It is an every day part of his job. If the above four recommended changes are implemented into the VE program, it is anticipated that a much more realistic VE savings will be recorded and the need for designated goals will be eliminated.

The above comments are based upon the association of one Army R&D engineer as a VE coordinator for approximately 100 engineers in his organization. The recommended changes to the AR 5-4 are also the culmination of many conversations. In essence, VE is accepted as a permanent mandate, but the above changes will certainly improve its acceptance among Army R&D engineers.

**END**

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